REMARKS

The Amendment

Claim 1 has been amended to a minor degree. Support for the amendment appearing on lines 22-25 of the amended claim can be found on page 8, lines 29 to page 9, line 3.

The Invention

The invention comprises a two-stage transfer with an indicia layer and an adhesive layer which are uniquely designed for use in rotational molding. Both of these layers must melt and become permanently incorporated into the wall of the polyolefin product. The top coat of the transfer is formed of a temperature and pressure sensitive adhesive. As recited by the claims, the pressure sensitive adhesive of the top coat must be substantially non-adhesive at ambient temperature and adhesive at the demolding temperature (about 90-170 F.). Additionally, the top and indicia coats must melt at the molding temperature to fuse into the wall of polyolefin product which is formed against the transfer.

The Rejection:

Claims 1- 3, 6-8, 16 and 17 were rejected under 35 USC §103 as considered by the examiner to be obvious from the teachings of Brandt in view of Markar et al.

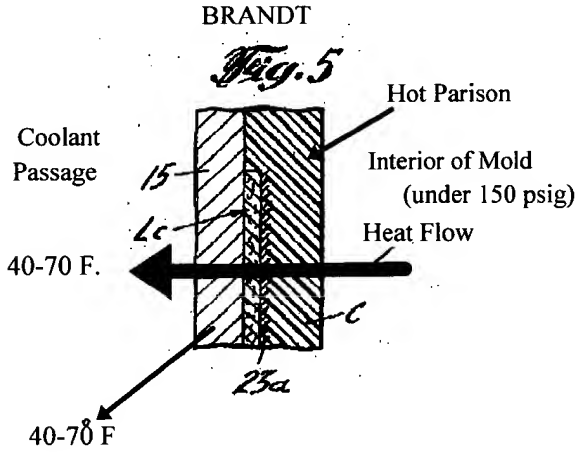
The Prior Art:

Brandt discloses an in-mold label for use in blow molding. The label L is a printed plastic (ethylene-vinyl acetate or branched chain ethylene polymer) which is temporarily secured to the interior of the mold with moisture and the unbalanced air pressure in the mold; see column 3, lines 1-6. An insulating layer 25 of paper or polyolefin can be used to reduce heat loss through the label and thus improve the

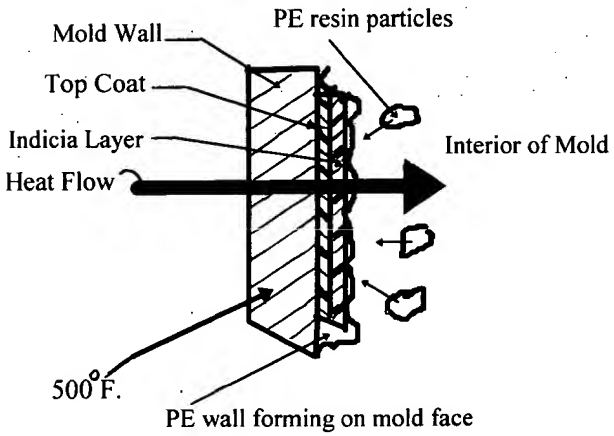
bond between the label and the parison. The outer surface of the parison can be flash heated to improve label adhesion; column 5, lines 27-35.

Blow molding of plastic hollow containers is a process which is entirely unrelated to rotational molding. Enclosed with this response is a copy of pages 149-153 and 158-159 of Blow Molding Design Guide by Norman C. Lee (1998). The conditions of blow molding are added to the Fig. 5 illustration of Brandt, below. Lee discloses the parameters required in blow molding, including the necessity for cooling of the mold immediately after the parison has been blown against the mold walls to temperatures of 40-70°F; see highlighted text on page 152. The parison is expanded by air blown into its interior at pressures up to 150 psig.; see highlighted text on page 159. Heat flows out from the parison to the coolant passage.

In contrast, heat flows into a rotational mold which is heated to 500°F. and the polyethylene particles in the mold hit the hot mold wall and melt on the wall forming the molded product; as illustrated in the illustration below Fig. 5 of Brandt.



This illustrates typical blow molding conditions experienced in the Fig. 5 illustration of Brandt.



This illustrates typical rotational molding conditions with the claimed transfer.

Applicants' Arguments:

None of the prior art discloses or suggests a transfer which has a heat activated adhesive layer (top layer) that is activated when applied to the mold wall at an elevated temperature and becomes non-adhesive at the higher molding temperature. As applied to rotational molding the adhesive layer bonds to the hot mold wall at the demolding temperature of 90° to 170°F. and melts at the much higher molding temperature (500°F.) and is fused into the molded product leaving the interior of the mold clean without any adhesive residue.

The examiner stated that:

> "it would have been obvious to one of ordinary skill in the art to modify Brandt's label to implement the transfer assembly of Markar while placing the thermal bondable layer next to the support layer, and the adhesive, yet releasable, layer as the top layer, motivated by the desire to improve the label attachment operation."

Applicant's attorney does not understand which label is to be modified by the examiner's combination of references. Is it a modification of Brandt's label to make it more useful for in-mold labeling for blow molding, or is it a modification of Markar's label to make it more adaptable to out-of- the mold labeling? Clearly, none skilled in the art would ever apply a heat activated adhesive layer to Brandt's label since the molds used in blow molding are cooled to ambient or lower temperatures; 40°-70°F. Similarly, what purpose would be gained in applying a top layer of an "adhesive, yet releasable layer" to Markar's label, particularly when such a layer could interfere with the protective lacquer layer 123 and hinder separation from the support 113?

Markar, moreover, does not disclose an "adhesive, yet releasable" layer. Instead, Markar discloses a heat activated adhesive layer 127 and a wax release layer 115. These layers are not contiguous. Instead, the heat activated adhesive layer is separated from the wax release layer 115 by the design layer 125 and the protective

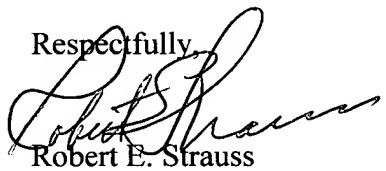
lacquer layer 123. Quite obviously, one cannot apply a heat activated adhesive layer and a wax release layer to the label of Brandt. Such a combination would be self-defeating for if the purpose of using a heat activated adhesive layer is to improve the adhesion of a label (design layer), then that purpose would be defeated by covering the adhesive layer with a wax release layer.

None of the prior art suggests applicant's claimed transfer which has a top layer that is substantially non-adhesive at ambient temperature, adhesive at a demolding temperature which is greater than ambient temperature and that melts at the molding temperature such that it separates from the mold, becomes incorporated into the molded product and leaves no residue on the mold wall.

The examiner is "cherry picking" features from the two references to assemble a combination using applicants' disclosure as a template. This is beyond the obviousness standard of one skilled in the art. Even, however, if this fundamental principle is ignored, the examiner's combination would not result in the claimed invention, nor would it result in a transfer which could be successfully used for in-mold labeling in rotational molding. This follows from the simple fact that a wax release layer on top of the heat activated layer of Markar would prevent adhesion of the adhesive layer.

In summary, the claims are of proper form and scope, without any indefiniteness, and define invention over the applicable prior art. Examination and allowance are solicited.

Respectfully,



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APPENDIX

1. A two-stage transfer for application to the interior surface of a rotational mold to impart indicia to a polyolefin product molded in said rotational mold at a molding temperature and ejected from the rotational at a demolding temperature less than the molding temperature, said transfer comprising:

a. a carrier sheet of a flexible material having an indicia area for reception of said indicia;

b. an indicia coat, in a preselected indicia array consisting essentially of a mixture of indicia material and hydrocarbon wax overlying said indicia area; and

d. a top coat of a pressure sensitive adhesive which is substantially non-adhesive at ambient temperature and adhesive at said demolding temperature substantially covering said indicia area and overlying said indicia coat; and

said indicia and top coats having melting temperatures less than said molding temperature to transfer to and become permanently incorporated into the surface of said polyolefin product, leaving no significant amount of residue on said mold surface.

2. The transfer of claim 8 including a backing coat of a pressure sensitive adhesive which bonds to the carrier sheet at ambient temperatures and releases from the carrier sheet at said demolding temperature between said indicia coat and said carrier sheet. substantially covering said indicia.

3. The transfer of claim 2 wherein the melting temperature of the backing coat pressure sensitive adhesive is less than said molding temperature.

6. The transfer of claim 2 wherein said backing and top coats extend peripherally beyond said indicia area, thereby encapsulating said indicia coat within said backing and top coats.

7. The transfer of claim 2 wherein said indicia coat is a mixture of from 30 to 99 weight percent hydrocarbon wax and from 1 to 70 weight percent colorant

8. The transfer of claim I wherein said polyolefin is polyethylene.

16. The transfer of claim 8 wherein said top coat adhesive is a hydrocarbon resin.

17. The transfer of claim 2 wherein said backing coat adhesive is a hydrocarbon wax.